ENDOTRACHEAL TUBE HOLDER

FIELD OF INVENTION

This invention relates to an endotracheal tube (ETT) and, in particular, to an improved ETT holder which adhesively attaches to a patient's skin.

BACKGROUND OF THE INVENTION

An endotracheal tube (ETT) is often used in the medical profession to provide a direct pathway for air, oxygen, or other such gases into a patient's lungs. The ETT is inserted through a patients mouth and is positioned in the trachea a certain distance. As a result, a patient's lungs can be supplied with gas from a ventilator. Moreover, an ETT is often necessary when a patient is not spontaneously breathing in order to properly move gas into the lungs.

Upon insertion, an ETT will likely not stay in position due to various intervening factors. Such factors include back pressure from the ETT and the lungs which tends to expel the ETT. Another frequent occurrence is patient movements which tends to move or dislodge the ETT from its optimum position. If the ETT becomes dislodged, the patient's life can be endangered due to the lack of gas being supplied to the patient.

Accordingly, a number of devices have been developed which serve to hold an ETT in position. U.S. Pat. Nos. 3,927,676; 5,306,233; 5,448,985; 5,490,504 and 5,501,216 each disclose devices for securing an endotracheal tube. However, each of these devices uses a strap which wraps around the patient's head or neck. Such straps can be hard to install and are uncomfortable for the patient.

U.S. Pat. No. 3,924,636 discloses an ETT holder which attaches to the patient's face via a facial strip with a central opening. This strip encompasses the patient's entire mouth. A tube-attaching strap is used to wrap around the ETT and is permanently attached to the bottom of a tube support. The tube support, however, is narrow-based and thereby does not adequately distribute stresses across the facial strip. The facial strip also encompasses the patient's mouth, a feature that will likely cause discomfort to the patient. Further, the permanent tube-attachment strap allows little relative movement of the inserted ETT against the tube support which can also cause further patient discomfort. U.S. Pat. No. 4,683,882 also discloses an ETT holder which poses similar problems having an adhesive facial attachment strip and a permanently attached C-clamp or notched strap clamp for attaching the ETT.

Still other types of attachments include U.S. Pat. No. 4,460,356, which disclose a pre-cut anchor tape with an upper and lower portion for securing an intravenous catheter to the arm of a person. The tape strip is adhered to the person along an upper portion, and a lower portion wrapped around a catheter running over the tape. U.S. Pat. No. 5,308,339 discloses a universal clamp for holding an article to an object. The clamp includes a base strip which is secured to an object and a releasably attached flap is placed over the article to hold it to the base strip.

Accordingly, the known prior art does not disclose an easy to use ETT holder which will securely and yet comfortably hold an ETT inserted into the patient. What is needed in the field is an ETT holder which securely attaches to the patient's face, yet minimizes contact area and related discomfort for the patient. Also a device is needed with a wider-based support structure for attaching the ETT, thereby more adequately distributing motion stresses across the holder. The device provides firm securement of the ETT inside the patient, allows for patient movement, is comfort to the patient, and allows for quick detachment of the ETT for repositioning if necessary.

SUMMARY OF THE INVENTION

The present invention provides an apparatus for holding an endotracheal tube (ETT) in position once it has been inserted and positioned inside of a patient. The apparatus is comprised of a foam strip with a medical grade adhesive backing, with the adhesive being covered by protective peel-off stripe. The front of the foam strip includes a support fixture adhered along the bottom edge. The fixture is preferably formed from a flexible plastic. The fixture includes an arcuate-shaped support tab extending away from the foam strip along the bottom edge of the fixture. The arcuate support tab includes a tab lip extending upward along its outermost edge. A strip of adhesive tape is placed over the upper portion of the support tab with the adhesive surface facing downward and extending from both sides of the support tab. The tape strip is oriented with its adhesive side facing downward and protectively covered by peel away strips. The tape strip is also contained from slipping off of the support tab by a proximal and distal tab lip. However, in an emergency, the ETT can be quickly removed by forcing the tape strip over the lip and off of the support tab, or by cutting away the tape strip. While the tape strip is preferred, the strip may be made from a hook & pile "VELCRO" attachment strip, adjustable hose style clamp strip, a tie strap, and so forth, all of which is deemed within the scope of this invention.

In operation, the protective strip is removed from the adhesive backing on the foam strip and the foam strip is adhered to the patient's face. The strip is positioned so that it runs from cheek to cheek and under the patient's nose. To accommodate such positioning, the strip is shaped so that it is relatively narrower in the middle and wider at the ends, similar in shape to a bow-tie. The wider ends provide a larger area for the device to adhere to the cheeks, thereby providing a more secure and stable platform for holding the ETT. Once the ETT tube is properly positioned, the attached support fixture and arcuate support tab are oriented along the upper, or lower, lip of the patient. The tube is positioned so that it rests inside the arcuate cavity formed on the underside of the support tab. The arcuate shape of the support tab allows the tab to substantially conform to the shape of ETT tube. The support tab may include additional accessory apertures allowing for the positioning of nasal and oral gastric tubes in addition to the ETT.

The adhesive surface on the tape strips are exposed by peeling off the protective coverings and the strips are adhesively wrapped around the ETT tube and any accessory tubes. The ETT tube is thereby secured to the holding apparatus in a proper position to service the patient, with the tab extension and support fixture particularly providing a stable anchoring surface for the ETT, as well as nasal gastric, oral gastric, or the like tubes.

Thus, it is an object of the present invention to provide a holder which securely holds an ETT or other such oral tube in position while it is being used on a patient.

It is still another object of the present invention to provide a holder which uses an attachment device which comfortably and securely adheres to the face of a patient.

It is yet another object of the present invention to provide a holder with an attachment device comprised of an adhesive foam strip with peel off protective covering strips over the adhesive backing.